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COLIN, CARL G	
ART UNIT	PAPER NUMBER
2436	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/803,167	NAZZAL, ROBERT N.	
	Examiner	Art Unit	
	CARL COLIN	2436	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/24/2008 has been entered.

Response to Arguments

2. In communications filed on 12/24/2008, applicant amends claims 1, 8-13, and 15-17, and 19-21. The following claims 1-22 are presented for examination.

2.1 Applicant's arguments filed on 12/24/2008 have been fully considered but they are not persuasive. Regarding claim 8, applicant argues about paragraph 47 for not disclosing baseline list and current list of port and/or service protocol. Examiner respectfully disagrees as other citations show that the profiles contain measures or values of port and/or service protocol (see for instance par. 36 and rejection below). Regarding claim 9, applicant requests more discussions about the paragraphs cited, more explanation is provided in the rejection below. It is noted that discovery, intrusion, and anomalities detected are indication of new service. Regarding claims 10 and 14, applicant's arguments are moot as a new ground of rejection and/or more detailed explanation are provided below. Regarding applicant's arguments about

Examiner's official notice, specific prior art and citations were provided on page 3 of the remarks (see for instance, Bruton and Cooper) contrarily to as argued by applicant. It appears that Applicant conceded on the citations of Bruton and Cooper by relying on a typo error in the citation in Kekik to support his arguments. Regarding claim 1, applicant argues about the prior art not disclosing a range. Examiner respectfully disagrees because according to the specification, a range may be a selection of a specific host, or any host in a specific role, or any host in a specific segment or anywhere in the network. Therefore the claim recitations have been met by the prior art. Therefore, upon further consideration, applicant has not overcome the rejection of claim 1. In view of the above the claims remain rejected.

Claim Objections

3. Claim 8 and the intervening claims are objected to because of the following informalities: the claim recites "longer duration that a current period". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.1 Claims 9, 16, and the intervening claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4.2 Claims 9 and 16 recite "*determine if the host is providing or using the new service*". The claims can be interpreted in the alternative for determining if the host is **providing or using** the

new service rather than different determination i.e. determining whether the host is providing or using the new service. Also, "providing the new service" is described in the original specification as sending traffic using the protocols not in the list, it appears that "providing" and "using" as described are similar terms since "using the new service" would also require using protocols not on the list.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication 2004/0010718 to **Porras et al** in view of US Patent 7,492,720 to **Pruthi et al**.

As per claim 8, **Porras et al** substantially discloses a *method for detection of a new service involving an entity, the method comprises:* **Porras et al** discloses monitoring network activity of an entity (see page 1, paragraph 11) that meets the recitation of *entity being tracked,* which includes analyzing event records such as port and or service protocols (see page 3, paragraphs 33 and 36) the method includes collecting statistical measures that includes port and or service protocols (see paragraphs 74 and 76) over a period of time (for instance, paragraphs 37-38 disclose how data may be collected over time) comprising the most recent data represented

as short-term statistical profiles (current list) and the normal, non-recent, data as long-term statistical profiles (baseline list) of an entity being monitored (see page 1, paragraphs 11 and 15, and paragraphs 40-41 and 74 and 76-77) that meets the recitation of *retrieving a baseline list of port and/or service protocols used by a host being tracked, the baseline list listing service and/or port protocols over a baseline period that is of a longer duration than a current period.* **Porras et al** discloses adjusting short term profiles for measure values observed in the event record, (see par. 41) the event record contains event streams and the measure values indicate port and/or service protocols (par. 71, 74, and 76-78) that meets the recitation of *retrieving a current list of service and/or port protocols for the current period used by the host being tracked;* **Porras et al** further discloses a comparison is made between the long-term and short-term profiles wherein the difference between them indicates suspicious network activity or abnormal activity (see page 1, paragraphs 11 and 15) or discovery of new service (see page 3, paragraphs 33 and 36 and page 4, paragraph 47) that meets the recitation of *determining whether there is a difference in the protocols, by having a protocol that was in a current list but was not in the baseline list; and if there is a difference; indicating a new service involving the tracked host.* As interpreted by the Examiner, the profile contains network activities (par. 40) and measures that describe network connections, which include service protocols (par. 71) monitored over long and short time period recorded in long-term and short-term profiles respectively (par. 37-38) and the difference of these measures in long-term and short-term profiles indicate network intrusion (see par. 71).

In the event that the long-term and short-term profiles of statistical measures of network connections are not well-founded as interpreted by Examiner as disclosing the baseline list and short term list, **Pruthi et al** in an analogous art discloses host connection table for service

protocols over a first and second time periods of time wherein the second time period is longer than the first time period (see columns 16, line 24 through column 18 with figs. 11-18 disclosing the connection tables with list of port and/or service protocols and claim 1 disclosing first and second time periods). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the profiles in connection tables as disclosed by **Pruthi et al** so that the list of port and/or service protocols are easier for sorting and comparing the data in the tables (see for instance, column 16, lines 31-64 and column 17, line 51 through column 18, line 3) as suggested by **Porras et al**.

As per claim 9, the references as combined above disclose *determining if the entity is providing or using the new service* (see **Porras et al**, page 4, paragraph 47 showing discovery of new service used by host, see also paragraph 74 disclosing traffic in and out showing indication of network intrusion (new service)).

As per claim 11, the references as combined above disclose *retrieving a value corresponding to the alert severity level set for violation of the rule* (see **Porras et al**, page 6, paragraph 67).

As per claim 12, the references as combined above disclose *wherein a property of the host being tracked is that the host is at least one of a specific host, any host in a specific role, any host in a specific segment, or any host* (see **Porras et al**, page 1, paragraph 10).

As per claim 13, the references as combined above disclose *wherein the extent of the determining is configured for that host, in its role, in its segment or anywhere in the network* (see **Porras et al**, page 1. paragraph 7).

As per claims 15, 16, 19, 20, and 21, these claims recite the same limitation as claims 8, 9, 11, 12, and 13 respectively except for incorporating the claimed method into a computer program. **Porras et al** discloses implementing the invention into a computer readable medium containing instructions (see page 8, paragraph 81). Therefore, claims 15, 16, 19, 20, and 21, are rejected on the same rationale as the rejection of claims 8, 9, 11, 12, and 13.

As per claim 18, the references as combined above disclose *wherein instructions to indicate further comprise instructions to issue an alert if the new service is detected* (see **Porras et al**, page 7, paragraph 71).

As per claim 10, **Porras et al** substantially discloses determining whether the activity exceeds a threshold value when the entity is using a new service (unknown port) and if the threshold exceeds and the entity is using a new service, anomaly is detected (see page 4, paragraphs 47 and 48). **Porras et al** suggests using a countermeasure response to report the anomaly (see pages 6-7, paragraphs 67 and 71). Although not using the same terms as the claim language it is apparent to one of ordinary skill in the art of intrusion detection that a rule for issuing an alert may be defined as exceeding a threshold value which indicates an attack as disclosed **Porras et al** and producing a countermeasure response or reporting the attack in

response to detecting can be reasonably interpreted as generating an alert. As known in the art, in an attack-response method when an attack is detected according to a specified rule, an alert is generated. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to issue an alert if is determined whether a rule specifies to issue an alert if the entity is providing or using the new service; and if it is also determined that the entity is providing or using the new service so as to protect the network from more global attacks by taking further actions (see page 7, paragraph 68) or by alerting other entities (see page 2, paragraph 16) as suggested by **Porras et al**.

As per claim 14, **Porras et al** substantially discloses measuring network connections and using a statistical profile to make the comparison (see page 1, paragraph 1-2) but does not explicitly disclose that the statistical profile is represented as a connection table. Examiner takes official notice that it is very well known in the art that network events can be represented in a form of a table and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the statistical profile of measures of network connections of **Pruthi et al** and implement it in a connection table so as to make it easier for reading, editing, and interpreting the data as known in the art.

As per claim 17, **Porras et al** substantially discloses determining whether the activity exceeds a threshold value when the entity is using a new service (unknown port) and if the threshold exceeds and the entity is using a new service, anomaly is detected (see page 4, paragraphs 47 and 48). **Porras et al** suggests using a countermeasure response to report the

anomaly (see pages 6-7, paragraphs 67 and 71). Although not using the same terms as the claim language it is apparent to one of ordinary skill in the art of intrusion detection that a rule for issuing an alert may be defined as exceeding a threshold value which indicates an attack as disclosed **Porras et al** and producing a countermeasure response or reporting the attack in response to detecting can be reasonably interpreted as generating an alert. As known in the art, in an attack-response method when an attack is detected according to a specified rule, an alert is generated. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to issue an alert if is determined whether a rule specifies to issue an alert if the entity is providing or using the new service so as to protect the network from more global attacks by taking further actions (see page 7, paragraph 68) or by alerting other entities (see page 2, paragraph 16) as suggested by **Porras et al**.

As per claim 22, **Porras et al** substantially discloses collecting statistical measures to provide the most recent data represented as short-term statistical profiles (current list) and the normal, non-recent, data as long-term statistical profiles (baseline list) (see page 1, paragraph 1-2, paragraphs 11 and 15, page 3, paragraphs 33 and 36 and page 4, paragraph 40), but does not explicitly state that the statistical measures are represented in a table. Examiner takes official notice that it is very well known in the art that network events can be represented in a form of a table and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the statistical profile of measures of network connections of **Pruthi et al** and implement it in a connection table so as to make it easier for reading, editing, and interpreting the data as known in the art.

6. **Claims 1-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication 2004/0010718 to **Porras et al** in view of US Patent 7,492,720 to **Pruthi et al** in view of US Patent 7,047,288 to **Cooper et al**.

As per claim 1, **Porras et al** substantially discloses a graphical user interface (see page 3, paragraph 31) for configuring a new service detection process, and discloses tracking an entity in the network (see page 1, paragraph 11) a method that allows a system to track *if the selected entity is providing or consuming a service* (such as using unknown port protocol) (see pages 4-5, paragraphs 40-41, 47-48); *depicts a range over which to track the selected entity* (see page 3, paragraph 35); *specifying severity for an alert generated if a new service is detected* (see pages 4-5, paragraphs 41 and 47-48; and pages 6-7, paragraph 67). **Porras et al** does not explicitly disclose the details of the graphical user interface. However, it would have only required routine skill in the art to implement the steps above into fields in a graphical user interface to make it interactive. **Pruthi et al** in an analogous art discloses host connection table for service protocols (see columns 16, line 24 through column 18 with figs. 11-18 disclosing the connection tables with list of port and/or service protocols) wherein a host can be selected and set of packets belonging to different services are displayed (see fig. 22 and column 19, lines 35-54). For instance figs. 16-18 show entities to be tracked and a selection wherein as shown in fig. 19 displays a range over which to track an entity selected in figs. 16-18 (see for instance, column 17, line 37 through column 18, line 3). **Cooper et al** in an analogous art teaches generating a human readable English language description of a formal specification of network security

policy that allows non-technical user within a user's organization to comprehend the policy by making the description simple enough to be understood (see abstract). **Cooper et al** discloses a graphical user interface (see for instance fig. 9) that includes several fields including field for specifying a host name, field for service being tracked (see figs. 9 and 31) that meets the recitation of *a first field that depicts choices for entities to track in the network*, field for specifying a range of the entity being tracked (see fig. 10A specifying a range in the network such as an Intranet domain) and field specifying a severity for an alert generated (see fig. 9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Porras et al** to implement the method disclosed by **Porras et al** into a graphical user interface represented by fields as disclosed in **Cooper et al**. One of ordinary skill in the art would have been recognized the advantages disclosed by **Cooper et al** who teaches generating a human readable English language description of a formal specification of network security policy that allows non-technical user within a user's organization to comprehend the policy by making the description simple enough to understood (see abstract).

As per claim 2, the references as combined above disclose *wherein the fields are linguistically tied together on the interface to form a sentence that corresponds to a rule* (see **Cooper et al**, column 28, lines 10-51 and fig. 12). Claim 2 is therefore rejected on the same rationale as the rejection of claim 1 above.

As per claim 3, the references as combined above disclose updating new rules in a database that meets the recitation of a list of new service detection rules stored in the detection

system (see **Cooper et al**, column 68, lines 14-67). Claim 3 is therefore rejected on the same rationale as the rejection of claim 1 above. Claim 4 is therefore rejected on the same rationale as the rejection of claim 1 above.

As per claim 4, the references as combined above disclose a field that allows a user to specify the entity to track as *a specific host, any host in a specific role, any host in a specific segment, or any host* (see **Porras et al,** page 1, paragraph 10 and **Cooper et al**, fig. 31 and fig. 9).

As per claim 5, the references as combined above disclose a field that specifies details for the extent of the comparison for the entity specified in the first field as *host, in its role, in its segment or anywhere in the network* (see **Cooper et al**, figs. 9, 10C, and 31). Claim 5 is therefore rejected on the same rationale as the rejection of claim 1 above.

As per claim 6, the references as combined above disclose the claimed method of claim 1. **Porras et al** also discloses wherein event severity is a numerical value (see **Porras et al,** page 6, paragraph 67) and **Cooper et al** discloses a graphical interface for entering severity value (see **Cooper et al**, fig. 9). Claim 6 is therefore rejected on the same rationale as the rejection of claim 1 above.

As per claim 7, the references as combined above disclose the claimed method of claim 1. **Cooper et al** further discloses pull down menu for inputting the information in the fields (see fig. 31). Claim 7 is therefore rejected on the same rationale as the rejection of claim 1 above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as the prior art discloses several of the claimed features such as graphical user interface for implementing network detection and comparing recent event detection with known event to determine that new service is detected. (See PTO-form 892).

7.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARL COLIN whose telephone number is (571)272-3862. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carl Colin/

Primary Examiner, Art Unit 2436

March 3, 2009